

# Predicting Undergraduate Council Funding Decisions Using Linear Discriminant Analysis

---

M. Gordon Byrd, Zhixin Kang,  
*University of North Carolina at Pembroke*

### Abstract

The Pembroke Undergraduate Research and Creativity Center's council assists the director in making funding decisions for the Undergraduate Assistant Scholarship (USA). A rubric was developed to guide the council's decisions. After the council members have reviewed and rated the USA proposals using a five-point rubric, the proposals then are ranked based on the mean of the ratings. Finally, the council discusses the proposals and makes funding decisions. The Linear Discriminant Analysis (LDA) was used to compare the mean, median, mean after truncation, and coefficient of variation (CV) as independent variables; the dependent variable was a funded or unfunded proposal. The results showed that the mean was the best predictor for this model. Some psychological theories are discussed to explain the results.

**Keywords:** *Linear Discriminant Analysis, undergraduate research funding, committee work, persuasive-argument theory*

**doi:** 10.18833/spur/1/2/5

In summer 2011, the Pembroke Undergraduate Research and Creativity (PURC) Center and the Native American-Serving, Nontribal Institutions (NASNTI) grant created paid summer internship/research assistantships. This grant is called the Undergraduate Student Assistantship (USA) and was extended to cover research and creative projects for the fall, spring, and summer academic terms. The USA grants were issued to students who were working with faculty mentors to produce research or creative works. The works produced by USA grant recipients were displayed at the annual PURC Symposium.

USA grant recipients received up to \$500 of supply money and a stipend of \$1200 for the semester. The students at University of North Carolina at Pembroke, PURC's parent institution, quickly saw the benefit of this grant, and the applicant pool increased annually. As the grant became more competitive, the criteria for funding a research or creative proposal were scrutinized by applicants, mentors and PURC council members alike. The director of PURC at the time, Tim Ritter, and the PURC council, a committee of eight faculty members from across the university, developed a rubric to assess each proposal according to the mission statement and values that PURC had upheld since its inception.

After collaborating with the PURC Council and other stakeholders in the university, a rubric with four criteria was implemented and shared with applicants (see Table 1). The four criteria are *clarity* of the proposal, *significance* of the project to the student's interests, *relevance* of the project to the discipline, and *learning outcomes* for the student. After PURC receives proposals, they are disseminated to the council members along with this rubric and a spreadsheet to tally the ratings for each proposal. The spreadsheet lists the proposal's student authors, mentors, and title, along with the amounts requested for supplies and the stipend. The spreadsheet lists the proposals alphabetically by author's last name. Council members are asked to give a 0–5 rating for all four criteria. Once submitted, the scores for the four criteria are averaged for each proposal. The proposals are then ranked based on their average rating.

The PURC Council meets regularly to discuss and vote on USA grant proposals as well as on proposals for student travel funds and student scholar support. At these meetings,